IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A method of forming a field effect transistor, the method comprising:

forming a channel heterojunction field effect transistor having a top surface; and

applying an AlN passivation layer directly on the top surface of the heterojunction channel field effect transistor at a temperature less than approximately 300 degrees Celsius to reduce uncontrolled changing of charge states in the transistor.

2. (Original) The method of claim 1 wherein the thickness of the AlN layer is between approximately 500 and 2000 Angstrom.

3. (Original) The method of claim 1 wherein Al and N are applied alternately until a desired thickness of AlN is obtained.

4. (Previously Presented) The method of claim 3 wherein a predetermined amount of time occurs between each alternate application.

5. (Currently Amended) A method of forming a field effect transistor, the method comprising:

forming a heterojunction channel field effect transistor having a top surface; and

applying an AlN passivation layer directly and conformally on the top surface of the heterojunction channel field effect transistor using molecular beam epitaxy at a temperature less than approximately 300 degrees Celsius.

6. (Previously Presented) The method of claim 5 wherein applying AlN comprises alternating beams of Al and RF nitrogen, wherein the beams are alternately applied for approximately two seconds until the desired thickness is obtained.

7. (Previously Presented) The method of claim 6 and further comprising delaying a predetermined amount of time between the alternating beams.

8. (Previously Presented) The method of claim 7 wherein the beams are alternately applied for approximately two seconds, and the delay is also approximately two seconds between the alternating beams until the desired thickness is obtained.

9. (Previously Presented) The method of claim 5 wherein the AlN is applied to a desired thickness is approximately 500 Angstrom.

10. (Cancelled).

11. (Currently Amended) A method of forming a layer of AlN of desired thickness on a semiconductor or optoelectronic device, the method comprising:

using molecular beam epitaxy:

applying beams of Al; and

applying beams of remote plasma RF nitrogen alternately with the beams of Al[[AL]] to produce the layer of AlN of desired thickness directly on the device at a temperature less than approximately 300 degrees Celsius.

12. (Original) The method of claim 11 wherein the beams are alternately applied for approximately two seconds until the desired thickness is obtained.

13. (Previously Presented) The method of claim 11 and further comprising delaying a predetermined amount of time between the alternating beams.

14. (Original) The method of claim 13 wherein the beams are alternately applied for approximately two seconds, and the delay is also approximately two seconds between the alternating beams until the desired thickness is obtained.

15. (Original) The method of claim 11 wherein the desired thickness is approximately 500 Angstrom.

16. (Original) The method of claim 11 wherein the beams are applied at approximately 150 degrees Celsius.

17. (Original) A method of forming a layer of AlN of desired thickness on a semiconductor substrate, the method comprising:

using molecular beam epitaxy at a temperature less than approximately 300 degrees Celsius:

applying a beam of Al;

waiting a predetermined period;

applying a beam of remote plasma RF nitrogen;

waiting a predetermined period; and

repeating application of the beams and waiting periods to produce the layer of AlN of desired thickness.

18. (Previously Presented) The method of claim 17 wherein the desired thickness of AlN is approximately 500 Angstrom.

19. (Previously Presented) The method of claim 17 wherein the beams last approximately two seconds each application, and the waiting periods are approximately two seconds.

Claims 20-30 (Canceled).

31. (Previously Presented) A method of forming a field effect transistor, the method comprising:

forming a heterojunction channel field effect transistor having a top surface; and

applying an AlN passivation layer to the top surface of the heterojunction channel field effect transistor using molecular beam epitaxy, wherein applying AlN comprises alternating

beams of Al and RF nitrogen at less than approximately 300[[150]] degrees Celsius, wherein the beams are alternately applied for approximately two seconds until the desired thickness is obtained.